Active Lessons Delivery: Concept and example in HICAP

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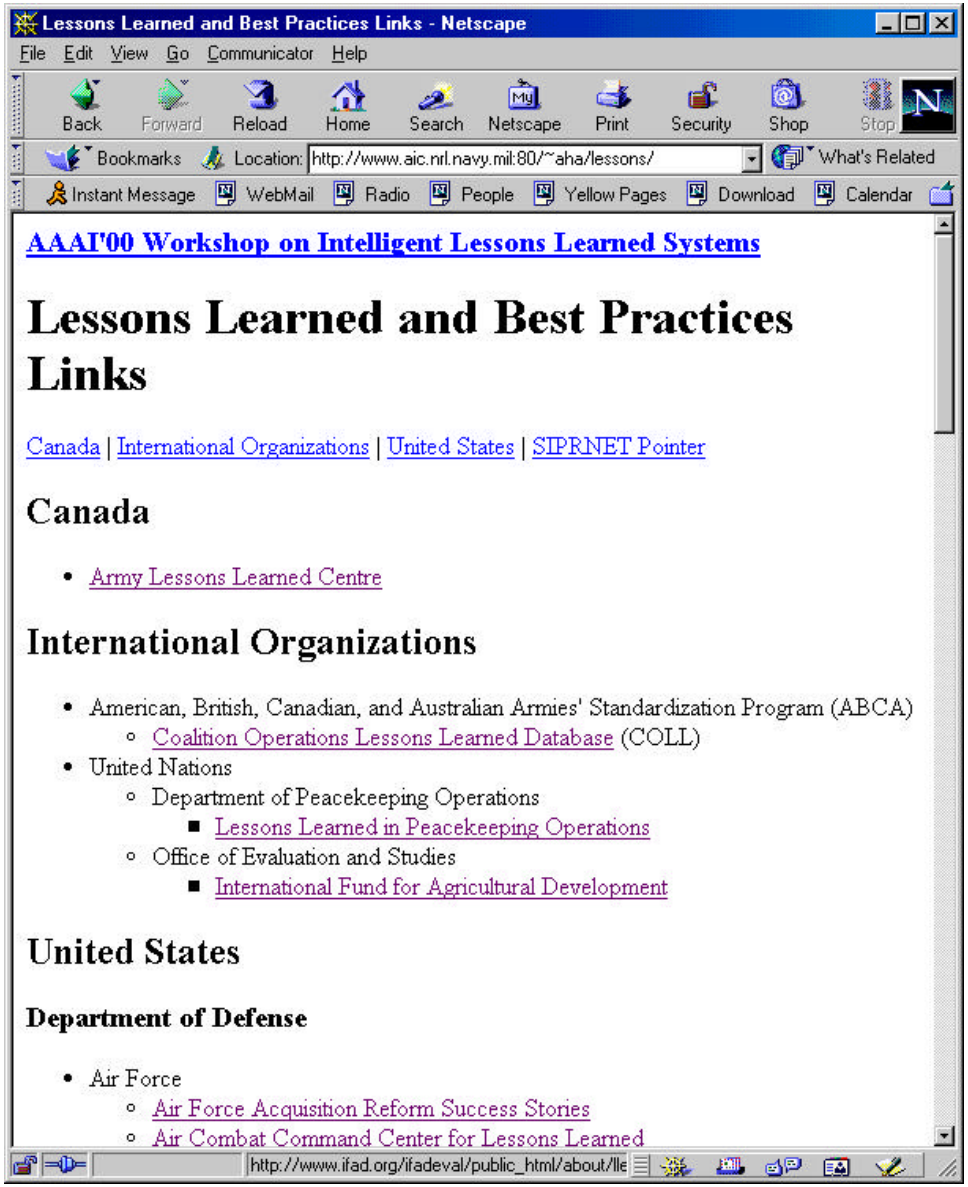
Lessons Learned (LL) Systems
Knowledge Management (KM)

Lessons learned systems: A Knowledge Management solution for storing, retrieving, and reusing experiential working knowledge.

Intended to promote knowledge sharing & leveraging.

Some Lessons Learned Centers



General Architecture for LL Systems

Search queries

Relevant lessons

Documented lessons

Center for Lessons Learned

Lessons Learned Repository

Do LL systems promote knowledge sharing??

Have they been incorporated to the learning organization's culture??

Problem: LL Systems
do not seem to be promoting knowledge sharing

Reasons:

System Issue:

- they are standalone;

Information Issue:

- lessons are not well-defined and complete;

Unrealistic Assumptions Users:

- users know about LL systems, and where to find them;
- users have the time and the skills to search (i.e., learn to use) them;
- users can correctly interpret the lessons and reuse them successfully;
- users are reminded of their possible utility when needed;

When is knowledge <u>needed</u> or <u>useful</u>??

- when a task is to be performed;
- when a decision is about to be made:

Knowledge is useful during planning, decision-making, and execution.

Knowledge is useful during decision-making.

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Most KM tasks are performed in the context of a well-defined (e.g., business) process, and any techniques designed to support KM must be embedded in it.

= **embed lessons learned in decision-support systems.**

An Active Lessons Delivery System

- not standalone;
- a lessons delivery agent is embedded in a decision support system;
- user is within the decision-making environment (i.e., managing tasks);

- when the user changes world state conditions, the agent checks if there are lessons that apply and does one of:

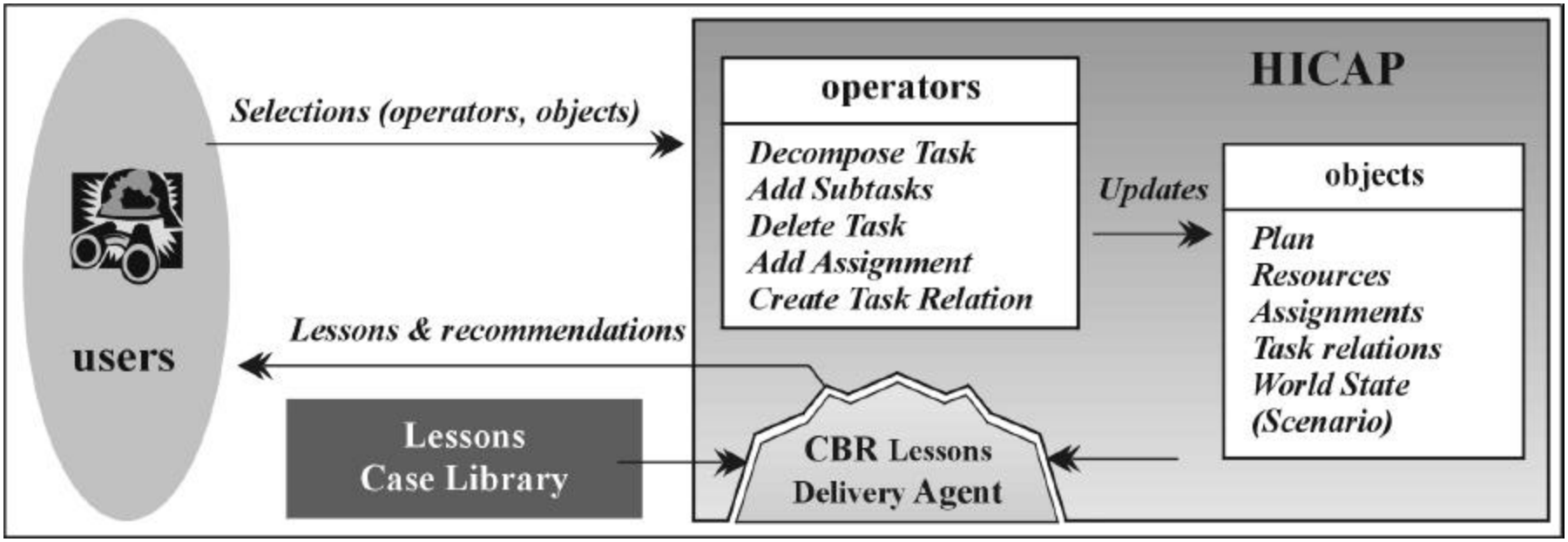
a) a lesson applies to the current decision
then that lesson is shown to the user immediately;

b) a lesson applies to a decision other than the current decision
then that lesson is highlighted without interrupting the user.

Implications of Active Lessons Delivery

- user doesn't need to know the agent exists;
- user doesn't need to learn to use it, it is active;
- no additional time is required for its use;
- lessons and suggestions are stated clearly;
- suggestions are related to the current decision;
- user is told about the lesson only if it is useful.

Our Solution:
Active Lessons Delivery in HICAP



The lessons learned process

- starts when a decision/task is about to be made;
- world state conditions match an applicable lesson;
- the applicable lesson contributes knowledge to perform the task/make a decision;
- the process is only completed when the lesson is learned, *i.e.*, knowledge is reused and a process has been changed.

The system that captures this process promotes knowledge sharing.

Directions

1. Review: lessons learned systems
2. Active Lessons Delivery: Design, implementation
3. Example in HICAP
4. Lesson representation
5. Evaluation: effect in plans
6. Lesson elicitation
7. Evaluation of overall project

Intelligent Lessons Learned Systems Workshop

AAAI-00 Workshop on
Intelligent Lessons Learned Systems

- Objective: Examine state-of-art on ILLS
- www.aic.nrl.navy.mil:80/~aha/lessons/
- www.aic.nrl.navy.mil/AAAI00-ILLS-Workshop

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